

Tensioned Rollable Ultra-light Solar array System (TRUSS), Phase I

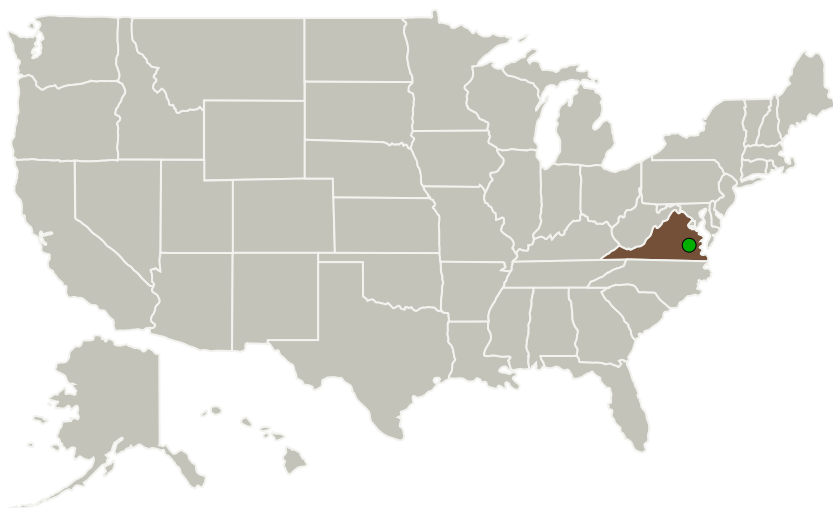
Completed Technology Project (2014 - 2014)



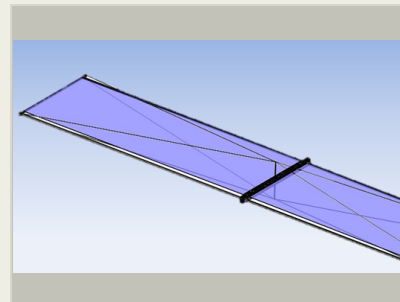
Project Introduction

TRUSS is a structurally efficient solar array concept that utilizes a TRAC rollable boom and tension-stiffened structure to exceed the program requirements for very large solar arrays. TRAC provides simple strain-energy deployment with a constant cross section and constant strength along its length, improving the reliability and simplicity of array deployment. The tensioning cables allow the structure to achieve mass efficiency much improved over the government reference array (GRA). The roll-out deployment of the TRAC booms also simplifies the ground support structure needed for testing and qualification of full-size arrays, which will be animated to illustrate in-space and ground-based deployments.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Analytical Mechanics Associates, Inc.	Lead Organization	Industry	Hampton, Virginia
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



Tensioned Rollable Ultra-light Solar array System (TRUSS) Project Image

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Tensioned Rollable Ultra-light Solar array System (TRUSS), Phase I

Completed Technology Project (2014 - 2014)



Primary U.S. Work Locations

Virginia

Project Transitions

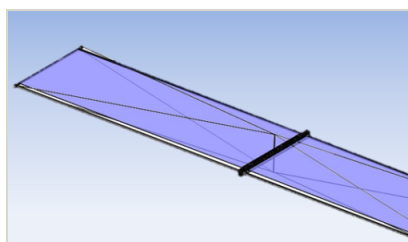
June 2014: Project Start

December 2014: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138616>)

Images



Project Image

Tensioned Rollable Ultra-light Solar array System (TRUSS) Project Image
(<https://techport.nasa.gov/image/129164>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Analytical Mechanics Associates, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

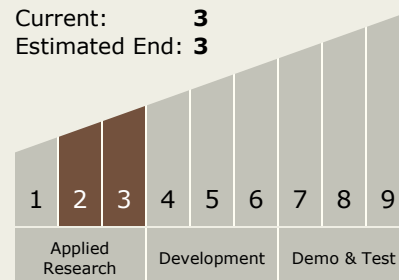
Carlos Torrez

Principal Investigator:

John Abrams

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Tensioned Rollable Ultra-light Solar array System (TRUSS), Phase I

Completed Technology Project (2014 - 2014)



Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
 - └ TX12.2 Structures
 - └ TX12.2.1 Lightweight Concepts

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System